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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,504	11/18/2005	Catherine Symonds	B0192.70059US00	4329

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EXAMINER	
HOUGHTLING, RICHARD A	

ART UNIT	PAPER NUMBER
1617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,504	SYMONDS ET AL.	
	Examiner	Art Unit	
	Richard A. Houghtling, Ph.D.	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 10-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 10-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending in this application. Upon receipt of a preliminary amendment filed on 02 May 2005, claims 1 and 10-19 were amended and claims 2-9 and 20 were cancelled. Claims 1 and 10-19 are pending in this application and examined on their merits, herein.

Priority

2. Applicants' claim to foreign priority to GB 0225676.6 (November 4, 2002) is acknowledged and is entered into the record.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 10, 12-14 and 19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Berman et al. 1998 (see PTO-892).

Applicants' invention is drawn to a method for treatment of brachial plexus avulsion in a human patient comprising administering to a patient in need thereof an effective amount of one or more cannabinoids (claim 1). Dependent claims require that additional treatment of neuropathic pain caused by the brachial plexus avulsion (claim 10) and that the cannabinoids comprise delta-9-tetrahydrocannabinol (THC; claim 12) or cannabidiol (claim 13), both (claim 14) or a cannabis based medicinal extract (claim 19).

Berman et al. teach the use of surgery and analgesics to alleviate the intractable neuropathic pain which is chronically-associated with injury of the brachial plexus which involves spinal cord root avulsion (Abstract; 1st ¶ (lines 6-7); see p. 199). It is noted that some avulsion injuries also may involve spinal cord damage (1st ¶ (line 5); see p. 199); and that the patient describes the pain as continuous, burning or compressing and also includes a jerking sensation (1st ¶ (lines13-16); see p. 199). Specifically, Berman et al. teach that 2 out of 3 patients using cannabis as an analgesic drug therapy had reported some benefit (see section entitled, "*3.5 Analgesics,*" p. 203 and Table 8 on p. 207). It is well known in the prior art that both delta-9-THC and cannabidiol are active agents found in the drug, cannabis. Therefore, Berman et al. teach each and every element of the claims 1, 10, 12-14 and 19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 11 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berman et al. (1998) as applied to claims 1, 10, 12-14 and 19 above, and further in view of Maurer et al. (1990; see PTO-892).

Berman et al. does not teach the use of cannabis for the treatment of sleep disturbance (claim 11), provide the specific ratios of THC and CBD (claims 15-16), or provide for medicament forms of delivering daily THC doses (claim 17) and packaged for delivery as a sublingual or buccal spray providing a daily dose less than 25 mg THC (claim18).

Maurer et al. teach that delta-9-THC has a beneficial effect to improve sleep disturbances in a patient suffering from a spinal cord pathology which is associated with pain and spasticity (see p. 1, 2nd ¶). In this double blind study, a dose-finding trial was conducted using 2.5 mg, 5 mg and 10 mg THC administered *per* orally in the form of impregnated sugar lumps (see *"Design of the Study"*, p. 2). Maurer et al. teach that

THC treatment significantly reduced the frequency of awakening compared to placebo and was comparable to that of codeine treatment (see Table 2, p. 3). Likewise, THC treatment also significantly increased the duration of sleep compared to placebo in a manner similar to that of codeine treatment (see Table 2, p. 3). In this study, pain, sleep and mood was found to be rated together with codeine as being superior to placebo and that THC also had an antispastic effect with a duration longer than 12 hr (see "Discussion," 4th ¶; p.3).

Maurer et al. teach that a purified component of THC may be *per* orally administered for the treatment of pain, sleep disturbance and spastic movements in a patient suffering from spinal cord damage due to an ependymoma. The patient experienced painful paraesthesias and had spastic paraparesis of the legs with intermittent spasms (see "*Neurological Examination*;" p.2). The symptomology found in this patient with spinal cord damage is similar to that found in patients suffering from brachial plexus avulsion as taught by Berman et al.

Berman et al. taught analgesic benefit following administration of cannabis in 2 out of 3 patients suffering from pain which was associated with brachial plexus avulsion which did not experience functional recovery following surgery. This suggests that the effect of the cannabis was pharmacological and unlikely mediated by the surgical procedure itself. Both THC and CBD are well-known art-recognized active components of cannabis. Because Berman et al. taught analgesic effects of cannabis administration

and Maurer et al. taught beneficial effects of THC administration, one of ordinary skill in the art at the time of the invention would have found it obvious to more carefully examine extracts from cannabis or medicinal extracts of cannabis to isolate additional candidate drugs or determine the ratios of the known THC and CBD active agents resulting in pharmacological effects.

It would have been well within the purview of the skilled artisan to adjust particular conventional working conditions (e.g., determining result effective amounts of the ingredients beneficially taught by the cited references, especially within the broad ranges instantly claimed), as well as, methods for treatment of sleep disturbance, pain and spasticity in these patients as these are deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan. Thus claims stipulating the ratio of THC and CBD between 2:1 and 1:2 (claim 15), substantially 1:1 (claim 16), in a medicament form delivering a dose of less than 37.5 mg THC (claim 17) and packaging the medicament as a sublingual or buccal spray providing a daily dose of less than 25 mg THC are all types of modifications that would have been well within the purview of the skilled artisan and no more than an effort to optimize results.

Conclusion

5. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A. Houghtling whose telephone number is (571) 272-9334. The examiner may normally be reached Mon-Thurs 8:30 am - 5:00 pm and alternate Fridays 8:30 am - 12:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan may be reached on (571) 272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard A. Houghtling, Ph.D.

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER